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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,310	04/19/2004	Yong Sung Ham	8734.025 C1	9810
30827	7590	03/24/2006	EXAMINER	
MCKENNA LONG & ALDRIDGE LLP			WU, XIAO MIN	
1900 K STREET, NW			ART UNIT	
WASHINGTON, DC 20006			PAPER NUMBER	

2629

DATE MAILED: 03/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/826,310	<b>Applicant(s)</b> HAM, YONG SUNG	
	<b>Examiner</b> XIAO M. WU	<b>Art Unit</b> 2674	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,2,5-8,15-18,20 and 21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,5-8,15-18,20 and 21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/19/2004</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 5-8, 15-18 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al. (US Patent No. 4,775,891).

As to claims 1, 2, 7, 8, 18 and 20-21, Aoki discloses a method of driving a liquid crystal display, comprising: modulating source data (e.g. O1-O4) using registered data previously provided (e.g. the 4-bit digital data O1-O4 are registered data previously provided in the A/D converter 3) and supplying the modulated data (D1-D3 when E=1) to a liquid crystal panel in a second field and applying data (D1-D3 = O1-O3) different from the modulated data to the liquid crystal panel in a first field. Furthermore, Aoki discloses that the modulated data signal has a voltage level larger than that of the un-modulated data signal as further recited in claim 21. For example, Aoki discloses that the output level of the data control circuit 4 is switched for every field according to the frame signal. More specifically, when the frame signal is at "0" level, the upper three bits of the input data O1 to O4 are fed as data D1 to D3 to the data control circuit 4 to be used for the display for one field. In the next field, the frame signal is at "1" level. In this case, if the least significant bit O of the output data O1 to O4 of the A/D converter 3 is "0", the upper three bits are provided as data D1 to D3 from the data control circuit 4. If the least significant bit O4 is "1", "1" is added to the upper three bits, and the resultant data are provided

Art Unit: 2674

as data D1 to D3 to the data control circuit so that the modulated data signal has a voltage level larger than that of the data signal. In other words, the data without modulation is applied to the LCD in a first field of one frame and the data with modulation is applied to the LCD in a second field of one frame. It is noted that Aoki does not specifically disclose applying the modulation data in the first field and applying the data without modulation in a second field. However, since the two fields of the data are combining into one frame, the gradation of the data for one frame would not be changed if the order of the two fields were changed. Thus, it would have been obvious to of ordinary skill in the art to have display the modulation data in the first field and following to display the data without modulation in the second field because it is alternative way for display two fields of data in the frame.

As to claim 5, Aoki discloses that one field period is one half period of the one frame period.

As to claim 6, Aoki discloses the source data (e.g. the data without modulation) are not applied to the liquid crystal panel while the modulation data are applied thereto.

As to claim 15, it would have been obvious to have a delay circuit for delay one field of data while another field of data are applied to the liquid crystal panel so that the second field of data can be displayed following the first field of the data.

As to claim 16, Aoki discloses further discloses a data driver (5-8, Fig. 6) and a scanning driver (9, 10, Fig. 6).

As to claim 17, Aoki discloses that the scanning lines were scanned twice in two fields within the one frame period.

***Response to Arguments***

3. Applicant's arguments filed 9/22/2003 have been fully considered but they are not persuasive.

Applicant argues that Aoki does not teach or suggest "modulating source data using registered data previously provided" as required in claims 1, 7 and 18 since no portion of Aoki et al. appears to discuss generating the 3-bit signal (D1-D3) using or based on registered data previously provided. This argument is not persuasive because Aoki clearly discloses that the modulating source data (e.g. O1-O4) using registered data previously provided (e.g. the 4-bit digital data O1-O4 are registered data previously provided in the A/D converter 3) and supplying the modulated data (e.g. D1-D3 when E=1 and the least significant bit is "1") to a liquid crystal panel in a second field and applying data (D1-D3 = O1-O3 when E=0) different from the modulated data to the liquid crystal panel in a first field.

***Conclusion***

4. This is a continuation of applicant's earlier Application No. 09/994,041. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

Art Unit: 2674

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to XIAO M. WU whose telephone number is 571-272-7761. The examiner can normally be reached on 6:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RICHARD HJERPE, can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

x.w.

March 17, 2006

  
**XIAO M. WU**  
**Primary Examiner**  
**Art Unit 2629**